

YUAN “CHARLES” CUI

charlescui@u.northwestern.edu

[digital-flaneur.github.io](https://github.com/digital-flaneur)

EDUCATION

Northwestern University	Evanston, IL
<i>Ph.D., Computer Science</i>	2020 - Present
<i>Advisor: Matthew Kay</i>	
<i>Master's, Computer Science</i>	2023
<i>Advisor: Matthew Kay</i>	
Oberlin College	Oberlin, OH
<i>B.A., Mathematics, Computer Science</i>	2016 - 2020
Budapest Semesters in Mathematics	Budapest, Hungary
<i>Study Abroad</i>	2019

PUBLICATIONS

- Promises and Pitfalls: Using Large Language Models to Generate Visualization Items.** [Yuan Cui](#), Lily W. Ge, Yiren Ding, Lane Harrison, Fumeng Yang, Matthew Kay. *IEEE VIS* 2024.
- Odds and Insights: Decision Quality in Exploratory Data Analysis Under Uncertainty.** Abhraneel Sarma, Xiaoying Pu, [Yuan Cui](#), Eli T Brown, Michael Correll, Matthew Kay. *ACM CHI* 2024. (Best Paper Honorable Mention)
- Adaptive Assessment of Visualization Literacy.** [Yuan Cui](#), Lily W. Ge, Yiren Ding, Fumeng Yang, Lane Harrison, Matthew Kay. *IEEE VIS* 2023.
- CALVI: Critical Thinking Assessment for Literacy in Visualizations.** Lily W. Ge, [Yuan Cui](#), Matthew Kay. *ACM CHI* 2023. (Best Paper Honorable Mention)
- Can an Algorithm be My Healthcare Proxy?.** Duncan McElfresh, Samuel Dooley, [Yuan Cui](#), Kendra Griesman, Weiqin Wang, Tyler Will, Neil Sehgal, and John Dickerson. *Explainable AI in Healthcare and Medicine* 2021.

PROFESSIONAL EXPERIENCE

Max Planck Institute for Demographic Research	Rostock, Germany
<i>Social Data Science Researcher</i>	06/2024 - 08/2024
Building statistical models to estimate age-specific mortality at the national and subnational levels in a data scarce context.	
RegLab @ Stanford Law School	Stanford, CA
<i>Graduate Fellow</i>	06/2023 - 08/2023
Designed statistical sampling techniques to estimate racial disparity when data is scarce, and established performance guarantees with mathematical proofs. Built simulations and estimated the health disparity in a dataset containing ~7M Americans' healthcare records.	
Carnegie Mellon University & Data Science for Social Good Foundation	Pittsburgh, PA
<i>Data Science Fellow</i>	05/2022 - 08/2022
Built a machine learning system to improve the routing of the 988 Suicide & Crisis Lifeline which serves 2,000,000+ callers per year. Obtained preliminary results that showed the new system could help ~20,000 additional callers each year.	

University of Chicago Consortium on School Research

Hyde Park, IL

Research Intern

03/2022 - 05/2022

Conducted clustering analysis on Chicago Public Schools data to predict students' graduation rate.

HomeRiser, Inc

Remote

Co-founder, Head of Data Science

01/2021 - 10/2021

Co-founded a real estate technology start-up to provide more flexible and affordable ways to finance people's home ownership. Developed a financial model in Python that simulated cash flow and generated a detailed profit and loss statement.

University of Maryland | REU - Combinatorics and Algorithms for Real Problems

College Park, MD

Undergraduate Researcher

05/2019 - 08/2019

Developed a machine learning model for advance healthcare directives. Deployed active learning algorithms to dynamically select survey questions based on patients' previous responses. Built a website to collect data. Coauthored a paper, which was accepted to the *Explainable AI in Healthcare and Medicine*.

Oberlin College Computer Science Department

Oberlin, OH

Undergraduate Researcher

06/2018 - 08/2018

Analyzed a repeated pricing game between a buyer and seller in the presence of privacy and the absence of commitment power. Conducted numerical experiments and solved for equilibrium in the game. Formalized results about the effect of privacy in our repeated sales setting.

PRESENTATIONS, WORKSHOPS, TUTORIALS

Presentations

Max Planck Institute for Demographic Research. "*A Fast and Furious Introduction to Computer Science*." Jul 2024, Rostock, Germany.

IEEE VIS. "*Adaptive Assessment of Visualization Literacy*." Oct 2023, Melbourne, Australia.

Data for Good. "*Improving the 988 Suicide & Crisis Lifeline's Service Through Better Call Routing*." Sept 2022, Seattle, WA. Joint with Irene Tang.

Tutorials

Max Planck Institute for Demographic Research. "*Building an Academic Website and Hosting on Github*." Jul 2024, Rostock, Germany.

ACM FAccT. "*Data Externalities*." Mar 2021, Remote. Joint with Rediet Abebe, Mihaela Curmei, Andreas Haupt, and Yixin Wang.

Workshops

ACM CHI. "*Toward a More Comprehensive Understanding of Visualization Literacy*." May 2024, Honolulu, HI. Joint with Lily W. Ge, Maryam Hedayati, Yiren Ding, Karen Bonilla, Alark Joshi, Alvitta Ottley, Benjamin Bach, Bum Chul Kwon, David N. Rapp, Evan Peck, Lace M. Padilla, Michael Correll, Michelle A. Borkin, Lane Harrison, Matthew Kay.

HONORS AND AWARDS

NICO Intersection Science Fellowship, Northwestern University	2024
HCI + Design Cluster Fellowship, Northwestern University	2022
Phi Beta Kappa, Oberlin College	2020
Elbridge P. Vance Scholar of Mathematics, Oberlin College	2016 - 2020

PROFESSIONAL SERVICE

The Journal of Visualization and Interaction

Open Practices Chair 2024 - present

EAAMO Bridges (formerly MD4SG)

Co-Director 2022 - present

Co-Lead of the Data Economies Working Group 2021

Membership Manager 2021

Conference Reviewer

IEEE VIS 2024

ACM CHI 2024

Conference Volunteer

ACM STOC 2021

ACM EC 2020

TEACHING EXPERIENCE

Teaching Assistant

Northwestern University

Evanston, IL

Computer Science Department 2021-2024

Design & Analysis of Algorithms, Mathematical Foundations of Computer Science (2x)

Oberlin College

Oberlin, OH

Mathematics Department 2017-2020

Linear Algebra (2x), Discrete Mathematics (2x), Calculus II, Calculus I

Economics Department 2019

Principles of Finance

Computer Science Department 2017

Introduction to Computer Science